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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/764,972	01/18/2001	Brent A. Holcombe	10004174-1	7111

7590 01/21/2004

AGILENT TECHNOLOGIES
Legal Department, 51U-PD
Intellectual Property Administration
P.O. Box 58043
Santa Clara, CA 95052-8043

EXAMINER

VO, PETER DUNG BA

ART UNIT	PAPER NUMBER
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3729

DATE MAILED: 01/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/764,972	Applicant(s) HOLCOMBE, BRENT A.	
	Examiner Jermele M. Hollington	Art Unit 2829	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 1/18/01 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
 a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, a plurality of holes [claim 1], a plurality of solder performs [claim 1] and BGA socket [claim 2] must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities: on page 4, line 22, in paragraph [0008] the number "101" should be change to --100--.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-2 are rejected under 35 U.S.C. 102(b) as being anticipated by Ebert et al (5497103).

Regarding claim 1, Ebert et al a method of constructing a probe assembly [test apparatus 10] comprising the steps of: creating a layout of a flexible circuit (flexible substrate 71) and etching said layout on said flexible circuit (71), wherein said layout results in a pattern of

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unetched portions (73); drilling plurality of holes (111 and 61) in a pair of rigid PC Boards (lower 53 and upper 103 boards) in a pattern matching the pattern of unetched portions (73); plating the plurality of holes (111 and 61) with annular rings; making a laminate stack by laminating the flexible circuit (71) between the two PC Boards (111 and 53), pressing a plurality of nail pins (33) into the laminate stack, wherein each of said nail pins (33) has a head (117) and each of said pins (33) is pressed until the head (117) is flush with one of said PC Boards (103) and said pins (33) extend through said laminate stack; placing solder preforms (115) over the portion of said pins (33) extending through said stack; and reflowing said solder preforms (115) to mechanically and electrically attach the pins (33) to one of said PC Boards (103).

Regarding claim 2, Ebert et al a method of constructing a probe assembly [test apparatus 10] comprising the step of attaching a BGA socket (13) to said laminate stack so that the ball grid array (19) of said BGA socket inherently contacts with the heads (117) of the plurality of pins (33).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 3-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ebert et al (5497103).

Regarding claim 3, Ebert et al a method of constructing a probe assembly [test apparatus 10] comprising the steps of: creating a layout of a flexible circuit (flexible substrate 71) and

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etching said layout on said flexible circuit (71), wherein said layout results in a pattern of unetched portions (73). However, they do not disclose said flexible circuit contains a plurality of inner signal layers, each of said layers having said pattern of unetched portions. It is well known to have more than one inner layers where needed [see *In re Harza*, 274 F.2d 669, 124 USPQ 378 (CCPA 1960)]. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have more than one inner layers in the flexible circuit since the plurality of inner layers represent duplication of parts in which the courts held that mere duplication of parts has no patentable significance unless a new and unexpected result is produced.

Regarding claim 4, Ebert et al a method of constructing a probe assembly [test apparatus 10] comprising unetched portions. However, they do not disclose the unetched portions are a star pattern. It is well known to have unetched portions as a star pattern [see *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966)]. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have unetched portions as star pattern or any other pattern since the star pattern itself is a matter of choice which a person of ordinary skill in the art would have found obvious absent persuasive evidence that the particular configuration of the claimed star pattern was significant.

Regarding claim 5, Ebert et al a method of constructing a probe assembly [test apparatus 10] comprising each of said unetched portions (73) has a diameter slightly larger than a diameter of a nail head (117) pin (33).

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Regarding claim 6, Ebert et al a method of constructing a probe assembly [test apparatus 10] comprising the plurality of holes (111 and 61) drilled into the pair of rigid PC Boards (103 and 53) have diameters equal to the press fit diameter of the nail pins (33).


Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Brown (4616406), Evans et al (5355079), Eldridge et al (5864946 and 6615485), Perino et al (6002589), Doherty et al (6330744), Holcombe et al (6378757), and Burns et al (6572387) disclose a method and apparatus for a probe card assembly.

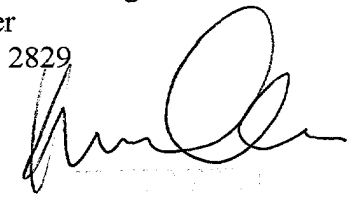
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jermele M. Hollington whose telephone number is (571) 272-1960. The examiner can normally be reached on M-F (9:00-4:30 EST) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamand Cuneo can be reached on (517) 272-1957. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-1651.


JMH
January 9, 2004

Jermele M. Hollington
Examiner
Art Unit 2829


STANDARD
7/21/2004